

First record of *Calamotettix taeniatus* HORVÁTH, 1911 (Hemiptera: Cicadellidae: Paralimnini) in Poland, with some remarks on the distribution and biology of the species

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ABSTRACT. First record of *Calamotettix taeniatus* HORVÁTH, 1911 (Hemiptera: Cicadellidae: Paralimnini) in Poland, with some remarks on the distribution and biology of the species.

The paper provides the first record of leafhopper *Calamotettix taeniatus* HORVÁTH, 1911 in Poland. In total, ten specimens were recorded in three sites representing the community with *Phragmites australis*, located within the following zoogeographical units – Krakowsko-Wieluńska Upland and Upper Silesia. Geographical distribution and biology of the species are also discussed.

KEY WORDS: *Calamotettix taeniatus*, Cicadellidae, Paralimnini, first record, Poland.

INTRODUCTION

Planthoppers and leafhoppers (Fulgoromorpha EVANS, 1946 and Cicadomorpha EVANS, 1946) are groups of insects which possess piercing-sucking type of mouthparts. Numerous species belonging here are included into the order Hemiptera. They play an important role in the food chain and occur in most terrestrial ecosystems worldwide (NICHEL 2003). More than 900 planthoppers and leafhoppers species are reported from Central Europe (HOLZINGER *et al.* 1997, HOCH 2013). The latest check-list by GĘBICKI *et al.* (2013) lists 542 species for Poland but this number recently raised to 547 with the following species added: *Idiocerus vicinus*, *Zygina griseombra* (WALCZAK *et al.* 2014, 2015), *Eupteryx decemnotata* (LUBIARZ & MUSIK 2015), *Reptalus quinquecostatus* (TASZAKOWSKI & WALCZAK 2015) and presented here *Calamotettix taeniatus*. Until now *Calamotettix taeniatus* has not been known from the territory of Poland, but, interestingly, this species was collected in Czech Republic (2007) in town of Černousy (MALENOVSKÝ & LAUTERER 2010), located about 1 km from Polish border, not far from Zgorzelec (Lower Silesia, south-western Poland). Shortly after that, this species was confirmed in southern part of Poland, in two regions: Upper Silesia (the vicinity of Lubliniec and Bytom) and Krakowsko-Wieluńska Upland (the city of Częstochowa). Being under intensive entomological research, both regions have the significant number of species recorded: 392 and 394, respectively (GĘBICKI *et al.* 2013, MUSIK & TASZAKOWSKI 2013, WALCZAK 2014, WALCZAK *et al.* 2014, 2015).

DISTRIBUTION AND BIOLOGY

Calamotettix taeniatus is a representative of the tribe Paralimnini DISTANT, 1908, which is represented in Europe by 52 genera with approximately 230 species (HOCH 2013), *Calamotettix taeniatus* is the one of 56 species of Paralimnini among Polish fauna (GĘBICKI *et al.* 2013). The species was described by HORVÁTH (1911) from Hungary (the Balaton lake). After that, it was recorded in: France, Germany, Czech Republic, Slovakia, Slovenia, Bulgaria, Romania, Moldova and Ukraine (HELLER 1987, NAST 1987, MALENOVSKÝ & LAUTERER 2010), but is known only from single records and small number of specimens. In recent years (2002 and 2003) a few specimens of this species were also caught in the light traps in southern Finland and western Russia (SÖDERMAN 2007, SÖDERMAN *et al.* 2009) what may suggest that this species has nocturnal activity. Regarding the trophic relations, it feeds monophagously on a common cane (*Phragmites australis*). Adults, which are rather easily disturbed and immediately fly away (HELLER 1987), prefer upper parts of the plant, whereas nymphs are found on the basal leaves. *C. taeniatus* prefer moist habitats, usually temporarily flooded areas, freshwater and inland salt marshes (NICKEL 2003, SÖDERMAN 2007). In respect to chorological elements, NICKEL & REMANE (2002) classify this species as Southern European, but it seems, in light of reports from Finland and Russia (SÖDERMAN 2007, SÖDERMAN *et al.* 2009), that it colonized also northern parts of Europe.

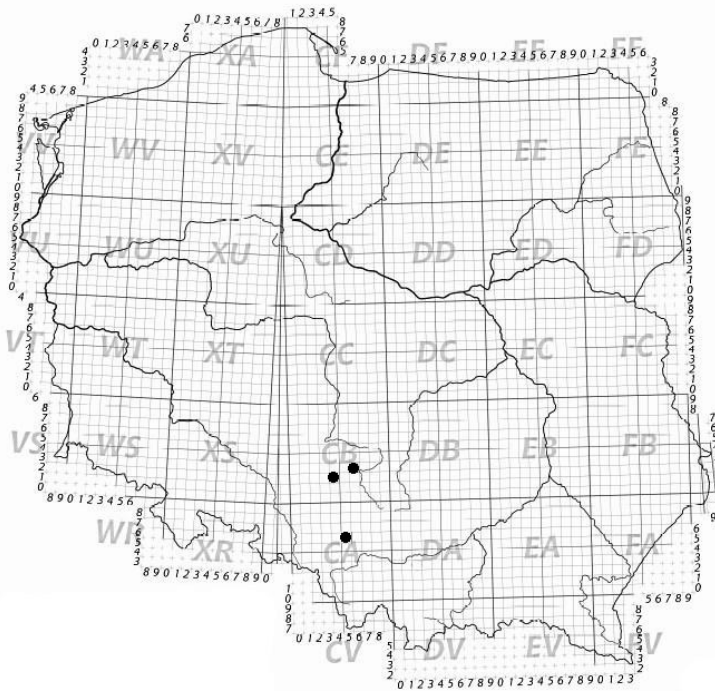


Fig. 1. Distribution of *Calamotettix taeniatus* HORVÁTH, 1911 in Poland.
 Ryc. 1. Rozmieszczenie *Calamotettix taeniatus* HORVÁTH, 1911 w Polsce.

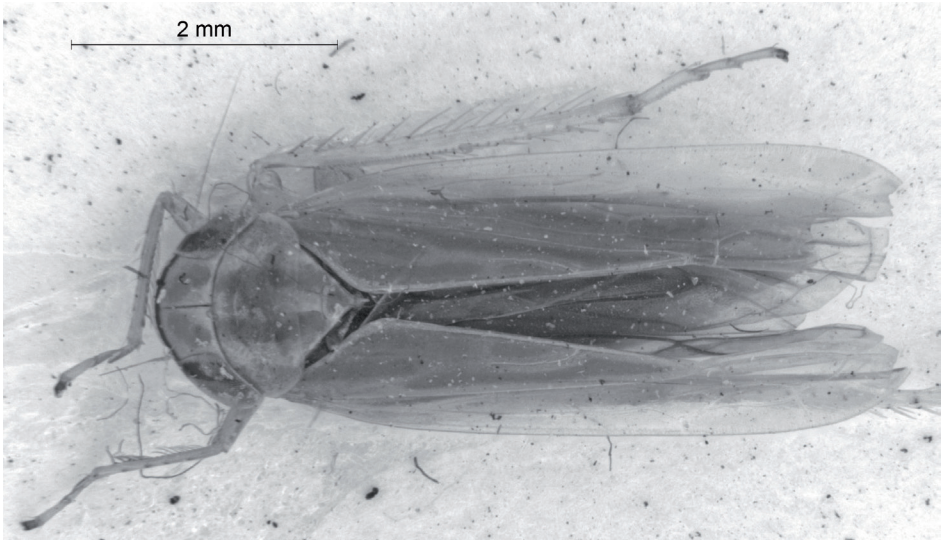


Fig. 2. *Calamotettix taeniatus* HORVÁTH, 1911 – female collected in the city of Częstochowa (Krakowsko-Wieluńska Upland).

Ryc. 2. *Calamotettix taeniatus* HORVÁTH, 1911 – samica złowiona w Częstochowie (Wyżyna Krakowsko-Wieluńska).

TAXONOMIC DESCRIPTION

Cicadellidae LATREILLE, 1802

Deltocephalinae DALLAS, 1870

Paralimnini DISTANT, 1908

Calamotettix EMELJANOV, 1959

Calamotettix taeniatus HORVÁTH, 1911

Distribution of *Calamotettix taeniatus* HORVÁTH, 1911 in Poland (Fig. 1). Zoogeographical units after *Katalog Fauny Polski* (BURAKOWSKI *et al.* 1973):

1. Krakowsko-Wieluńska Upland

Częstochowa, district Lisiniec, recreational park, N50°48'36", E19°04'34", UTM: CB63, on *Phragmites australis*: 23.07.2012, 1♀ (Fig. 2), leg. and det. Marcin Walczak (WALCZAK *et al.* 2014, 2015);

2. Upper Silesia

Chwostek near Lubliniec, N50°42'54", E18°49'10", UTM: CB42, on *Phragmites australis*: 20.07.2013, 1♂, 3♀♀; 02.08.2013, 2♀♀; 31.08.2013, 1♀, leg. Marzena Jeziorowska, det. Marcin Walczak (JEZIOROWSKA 2014 unpubl.);

Bytom (spoil tip of the „Orzeł Biały” factory), 50°20'14.2"N 18°56'36.1"E, UTM: CA57, on *Phragmites australis*: 18.07.2014, 1♂, 1♀, leg. Mateusz Gibas, det. Marcin Walczak (GIBAS 2015 unpubl.);

DISCUSSION

Taking into account the report of *C. taeniatus* from the Czech Republic from year 2007 (MALENOVSKÝ & LAUTERER 2010), and earlier data from Germany (NICKEL & REMANE 2002) and Western Russia (SÖDERMAN et al. 2009), the occurrence of this species in Poland has seemed to be almost undisputable. For this reason, the research on standings of *Phragmites australis*, the host plant of *C. taeniatus*, has been carried out. The communities of planthoppers and leafhoppers related to *Phragmites australis* were already studied by several authors, but are relatively poorly known. The results from Biebrza Marshes (GĘBICKI et al. 1982) indicated the presence of 16 species. Similarly developed planthopper communities were observed in associations with *Phragmites australis* in the vicinity of Bukowno (SZWEDO 1997 unpubl.) and Ruda Śląska (SIMON & SZWEDO 2005). They reported 17-22 species and indicated high abundance of *Arthaldeus pascuellus*, *Philaenus spumarius* and *Stenocranus major*. Fragmentary data on the planthopper fauna of similar plant associations – swamps (*Caricion lasiocarpae* and *Caricetum appropinquatae*), wet meadow (*Filipendulo-Petasition*, *Calthion* and *Molinion*), scrub communities (*Salicion albae* and *Alno-Padion*) and peat bogs (*Oxycocco-Sphagneteta* and *Scheuchzerio-Caricetea*) – have come from Izerskie Mts., Stołowe Mts., Bieszczady Mts., Upper Silesia, Krakowsko-Wieluńska Upland (GĘBICKI et al. 1982, SZWEDO et al. 1998, WALCZAK 2008, 2014, GAJ et al. 2009, ŚWIERCZEWSKI & BŁASZCZYK 2011). They indicated interesting and rare species, like: *Euides basilinea*, *Delphax pulchella*, *Florodelphax leptosoma*, *Paradelphacodes paludosa*, *Cicadella lasiocarpae*, *Stroggylocephalus livens* and *Cosmotettix panzeri*. Thus, further detailed studies of planthoppers and leafhoppers of hygrophilous plant associations need to be conducted.

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STRESZCZENIE

Pierwsze stwierdzenie *Calamotettix taeniatus* HORVÁTH 1911 (Hemiptera: Cicadellidae: Paralimnini) w Polsce, z uwagami o rozmieszczeniu oraz biologii tego gatunku

Calamotettix taeniatus HORVÁTH, 1911 to rzadko łowiony gatunek piewika z plemienia Paralimnini DISTANT, 1908. Znany jest z pojedynczych stanowisk i niewielkiej liczby okazów. Holotyp pochodzi z Węgier z okolic Balatonu. *C. taeniatus* znany jest z Francji, Niemiec, Czech, Słowacji, Słowenii, Bułgarii, Rumunii, Mołdawii oraz Ukrainy, a w ostatnich latach został stwierdzony również w Finlandii i zachodniej Rosji. Interesujące jest znalezienie jednego okazu w 2007 na terenie Czech koło miejscowości Černousy, w odległości zaledwie 1 km od polskiej granicy. Prowadzi nocny tryb życia i żeruje na trzinie pospolitej (*Phragmites australis*). Nimfy spotykane są na wewnętrznych częściach przyziemnych liści, co najwyżej do wysokości kilkunastu centymetrów nad ziemią. Osobniki dorosłe są bardzo płochliwe i zaniepokojone natychmiast odlatują.

Jest to gatunek piewika nowy dla fauny Polski, znany dotychczas z 10 okazów odłowionych na 3 stanowiskach: w Częstochowie, w okolicach Lublińca oraz w Bytomiu. Pierwszy okaz samicy (Ryc. 2) został złowiony 23.07.2012 w Częstochowie, w dzielnicy Lisiniec.

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